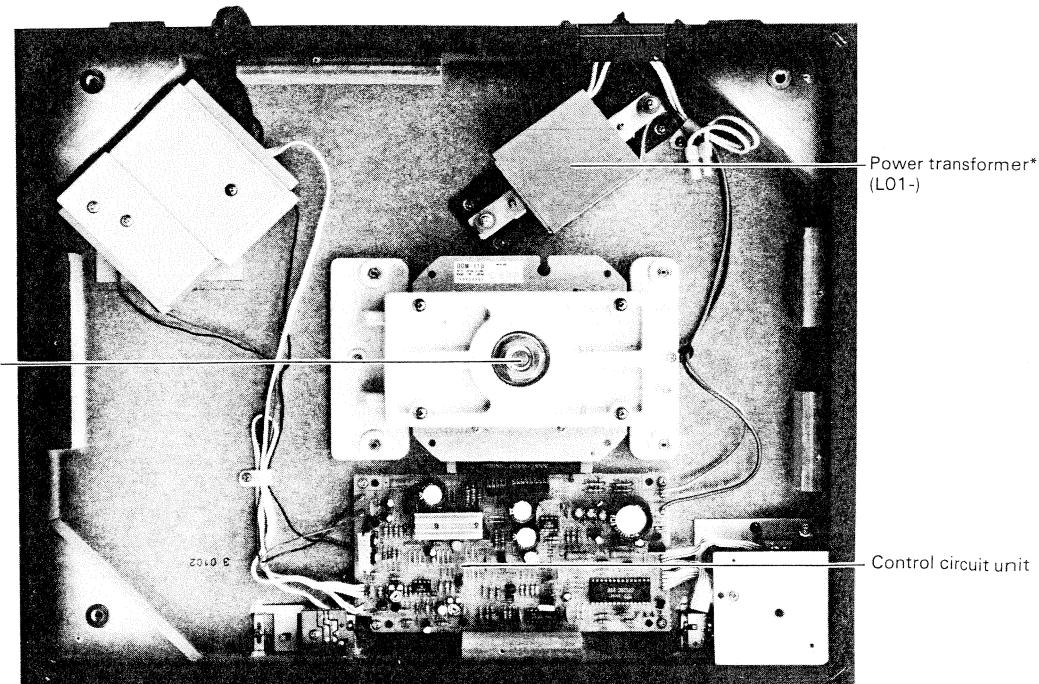
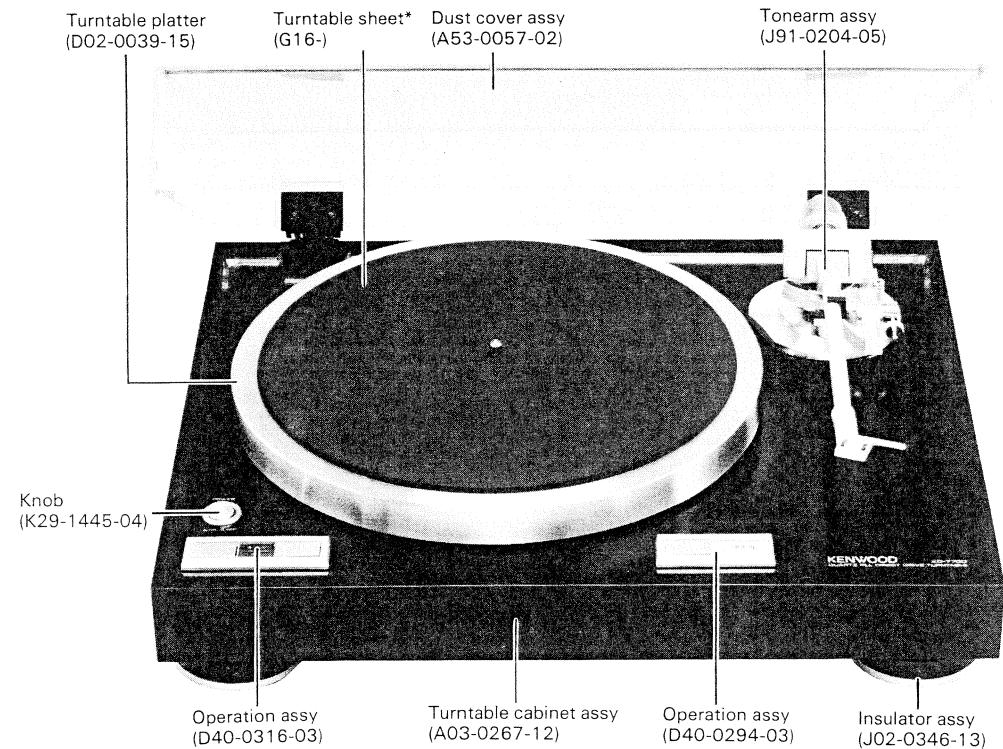


SERVICE MANUAL

KENWOOD

KD-770D

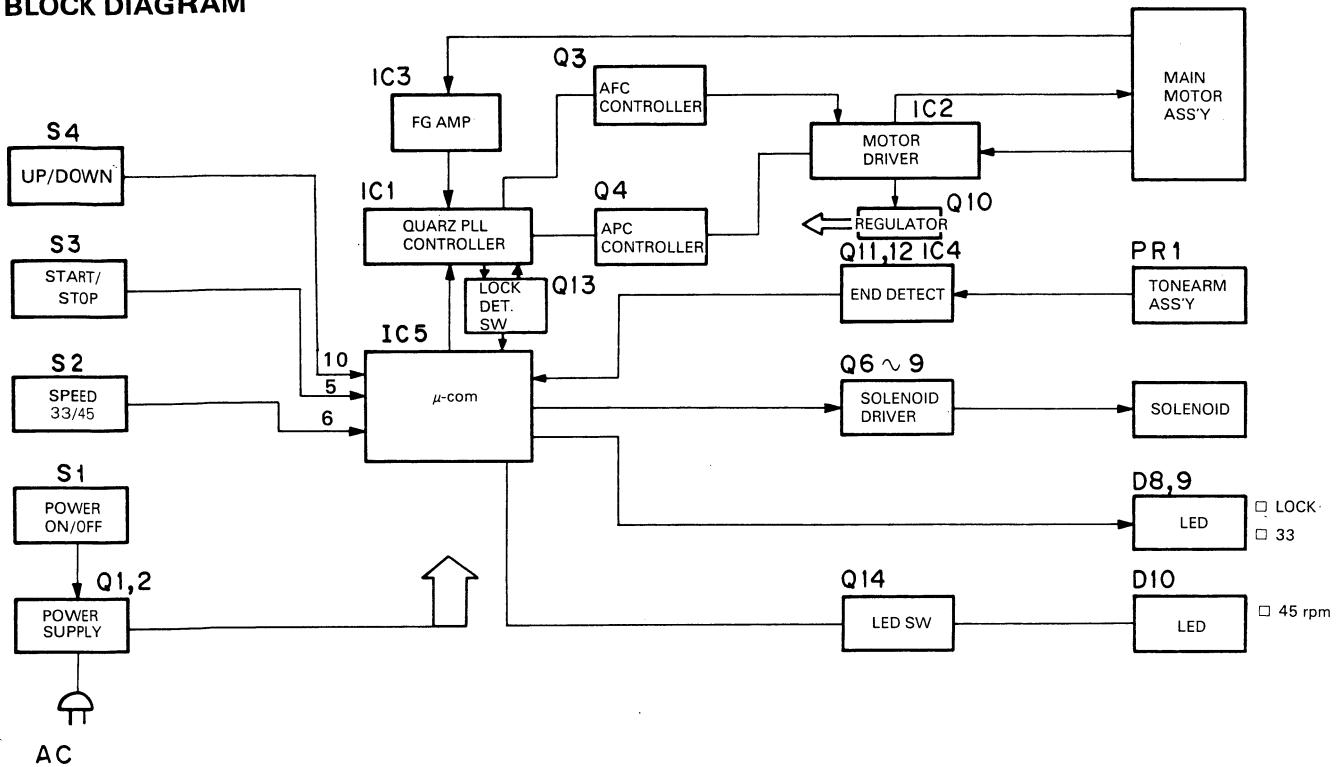
QUARTZ PLL DIRECT DRIVE TURNTABLE



Caution: In EXPLODED VIEW Parts with the exploded numbers larger than 700 are not supplied. Refer to Parts list on Page 9.

BLOCK DIAGRAM

BLOCK DIAGRAM



LOGIC CONTROL

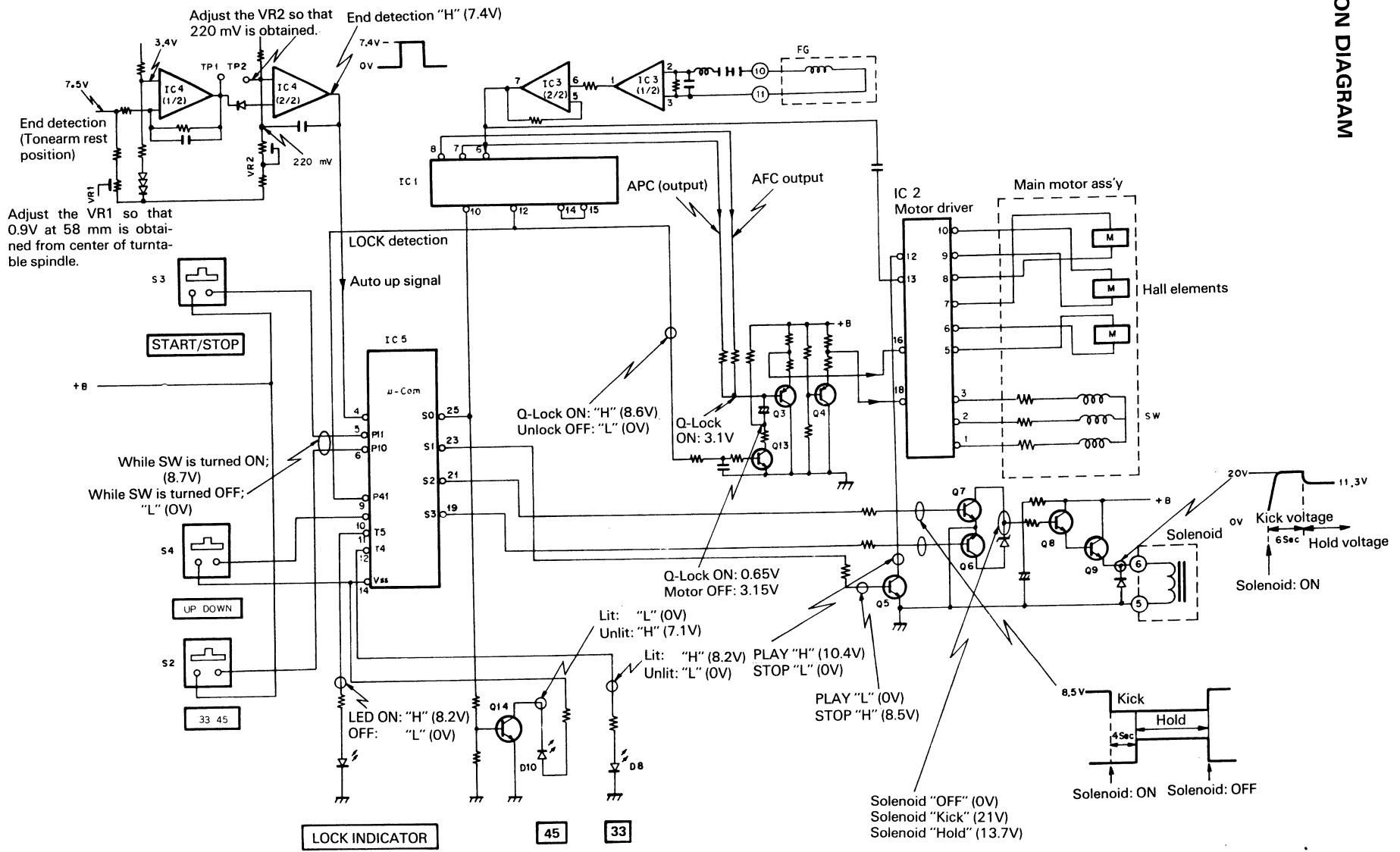
a. Input switches are described below.

SW.	FUNCTIONS
START/STOP	<ul style="list-style-type: none"> ○ Initialized to STOP state when power is turned on. Switches between START and STOP state at every one push. ○ 4 seconds after END detection, the switch returns to STOP state (auto stop function). ○ When STOP button is pressed, braking operation is executed till the turntable rotational speed becomes below prescribed speed.
33/45	<ul style="list-style-type: none"> ○ Initialized to 33 1/3 r.p.m. when power is turned on. Switches between 33 1/3 r.p.m. and 45 mode at every one push.
UP/DOWN	<ul style="list-style-type: none"> ○ Initialized to UP state when power is turned on. Switches between UP and DOWN state at every one push. ○ When END detection is operated, the tonearm returns to UP state. (auto up function) * When power switch or AC line is turned off, the tonearm returns to UP state.
	Function of each input switch is independent.

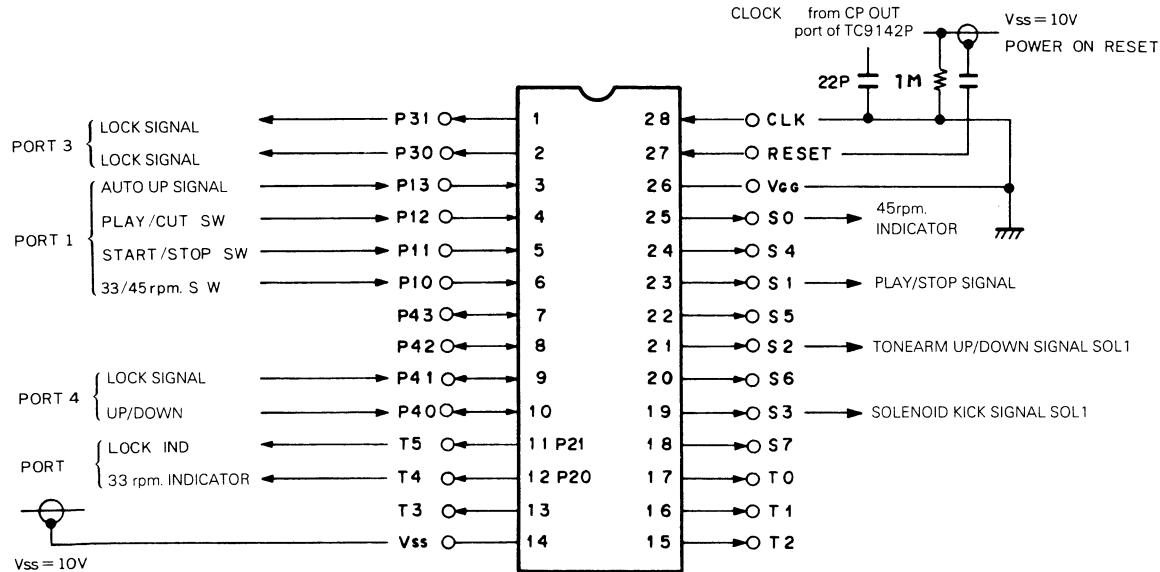
OPERATION DIAGRAM

CIRCUIT DESCRIPTION

KD-7700



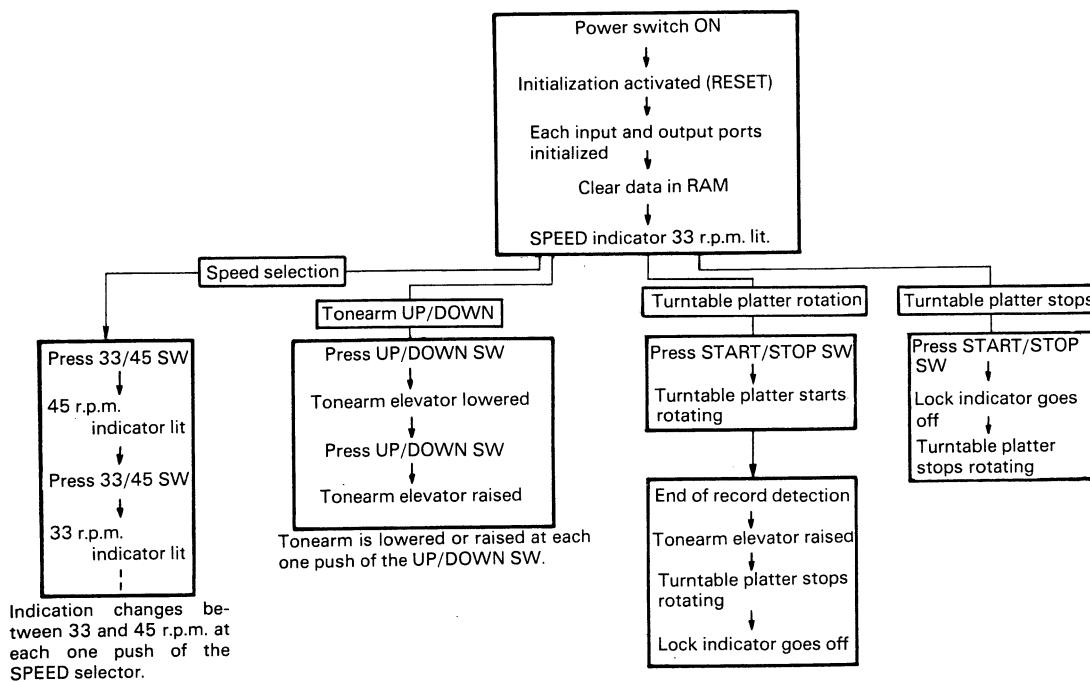
CIRCUIT DESCRIPTION

Port description of μ PD 7520C-028

Note: Port 30 and 31 (Port 3: Lock signal output) are not used in KD-770D.

 μ PD7520C-028 Function description

Operation starting from the time the power switch is turned on is shown below in the following.



CIRCUIT DESCRIPTION

Condition of each μ PD7520C-028 ports

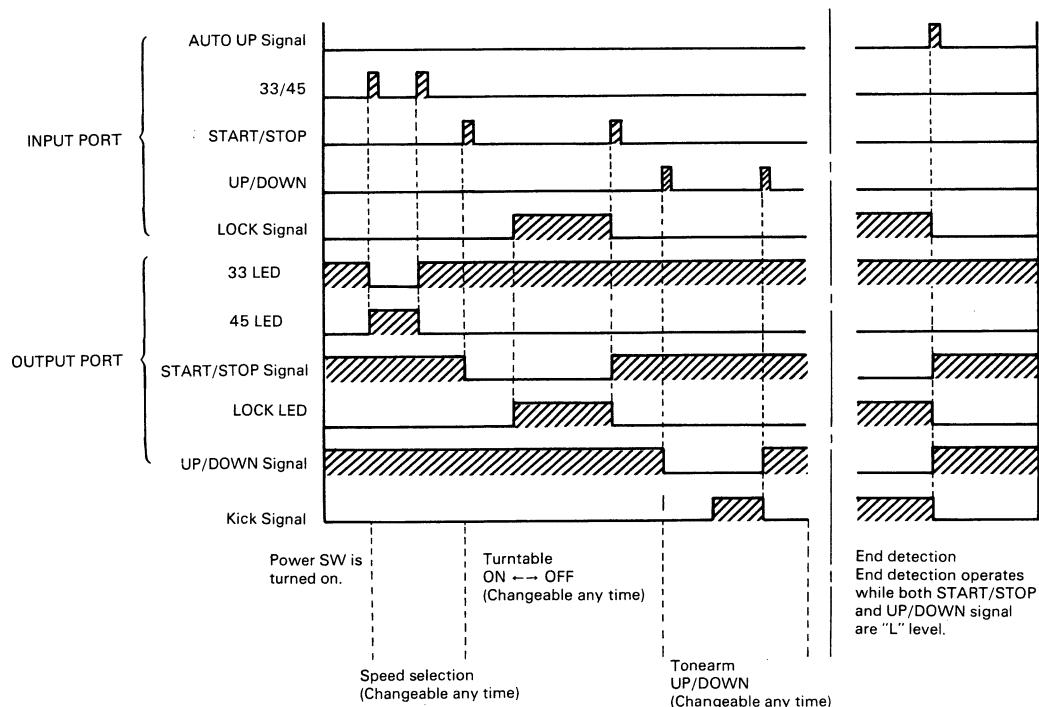
- (1) Initialization (Power ON)
- (2) Speed selection (33/45 rpm)
- (3) Turntable platter starts rotating (START)
- (4) Tonearm auto up
- (5) Turntable platter stops rotating (STOP)

The above mentioned (1) ~ (5) are placed in the order of the functions described in " μ PD7520C-028 Function description". The conditions shown in the table below are also in that order so that functions can be confirmed while checking the IC's ports.

		INPUT PORT						OUTPUT PORT					
PORT NO.	PIN NO.	P10	P11	P12	P13	P40	P41	T4	T5	S0	S1	S2	S3
PORT NAME		33/45 SW	START SW	AUTO UP Signal	Not used	UP DOWN SW	LOCK Signal	33rpm LED	LOCK LED	45rpm LED	START STOP Signal	UP DOWN Signal	Kick Signal
(1)	Power ON RESET												
(2)	33/45 SW ON (45) ↓ 33/45 SW ON (33)												
(3)	START/STOP SW ON												
(4)	Auto up signal IN START/STOP SW ON												
(5)	START/STOP SW ON												

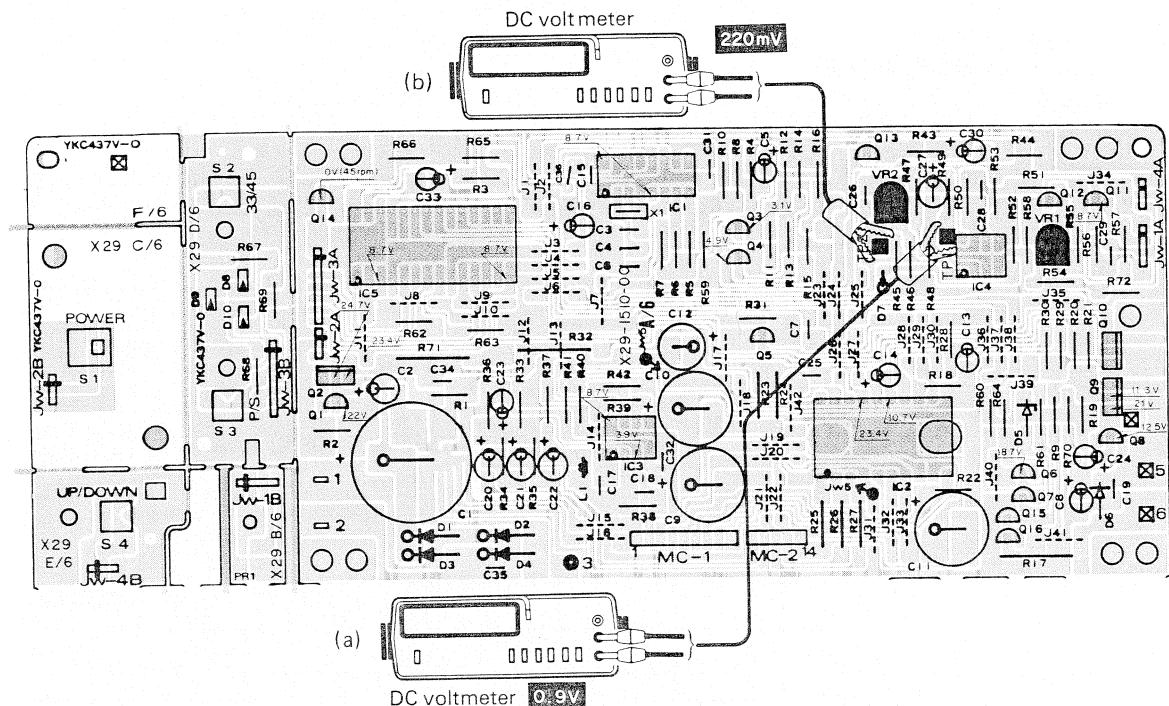
I/O port timing diagram

(Note) This diagram shows the timing for operations (1) to (5) described on page 4.



PC BOARD/ADJUSTMENT/REGLAGES/ABGLEICH

CONTROL PCB (X29-1510-01) Component side view



Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TURNTABLE SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	END DETECT STARTING POSITION	—	Connect a DC voltmeter to TP1 (Pin 7 of IC4)	Set the stylus tip so that 57.5mm is obtained from the center of the turntable spindle.	VR1	0.9V	(a)
2	THRESHOLD VOLTAGE	—	Connect a DC voltmeter to TP2 (Pin 2 of IC4)	—	VR2	220mV	(b)

REGLAGES

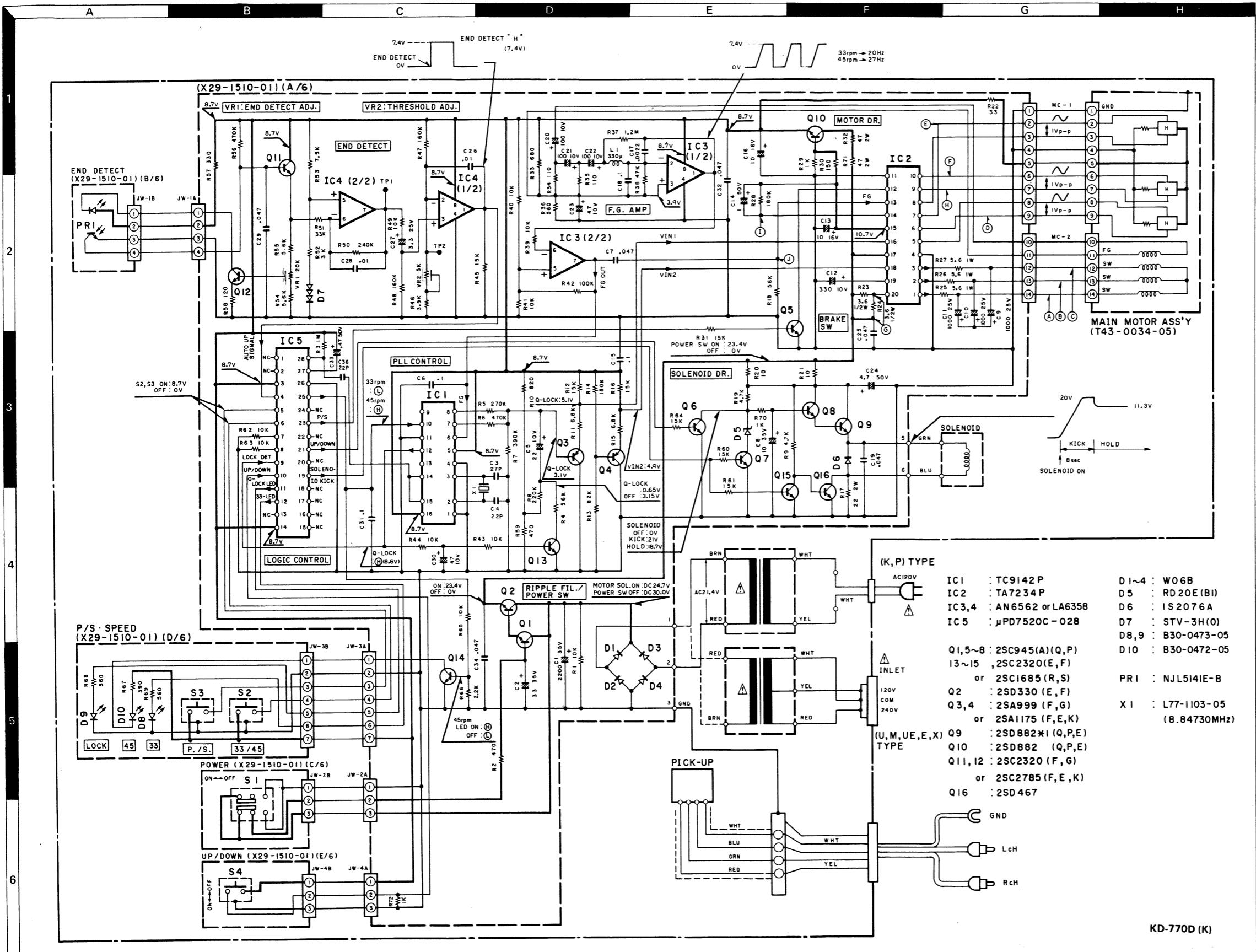
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE TOURNÉE-DISQUE	POINTS L'ALIGNEMENT	ALIGNER POUR	FIG.
1	POSITION DE DEPART LA TERMINATION DE DETECTEUR	—	Connecteur un voltmètre CC à TP1 (Fiche 7 de IC4)	Régler la crête de aiguille de façon de 57,5mm soit obtenir de centre de plateau à disques.	VR1	0,9V	(a)
2	TENSION DE SEUIL	—	Connecteur un voltmètre CC à TP2 (Fiche 2 de IC4)	—	VR2	220mV	(b)

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	PLATTEN SPIELER-EINSTELLUNG	ABGLEICH PUNKTE	ABGLEICHEN FÜR	ABB.
1	ENDE DETEKTS ANFANGS-STELLUNG	—	Einen Gleichspannungs messer zu TP1 (Stift 7 von IC4) anschließen.	Der spitze von Tonabnehmer so einstellen, daß ein 57,5mm aus der Mitte des Plattentellers erhält wird.	VR1	0,9V	(a)
2	SCHWELLEN-SPANNUNG	—	Einen Gleichspannungs messer zu TP2 (Stift 2 von IC4) anschließen.	—	VR2	220mV	(b)

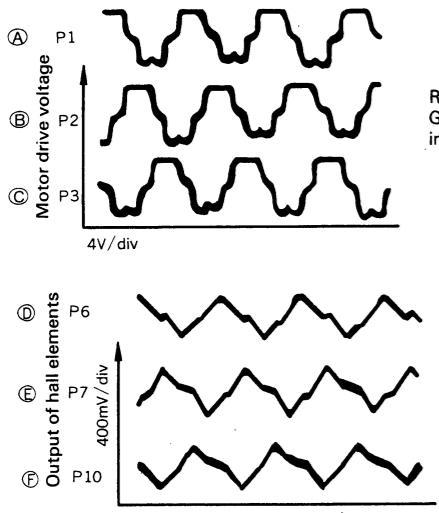
QUARTZ PLL DIRECT DRIVE TURNTABLE

KD-770D

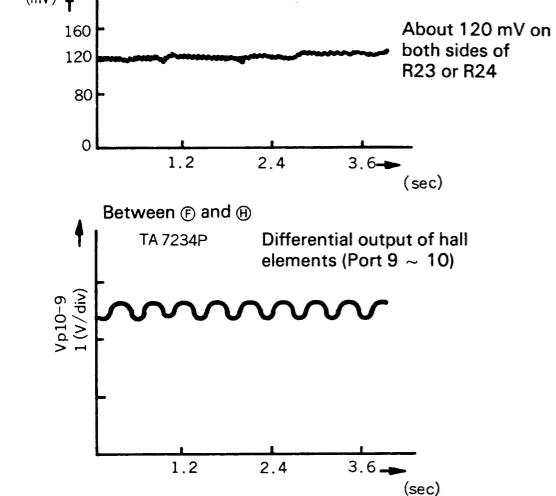


KENWOOD

QUARTZ PLL DIRECT DRIVE TURNTABLE

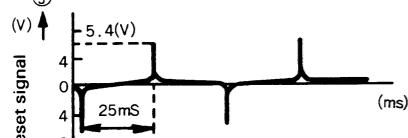


Registers
GND level
in shifting

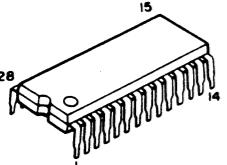


about 120 mV on
both sides of
23 or R24

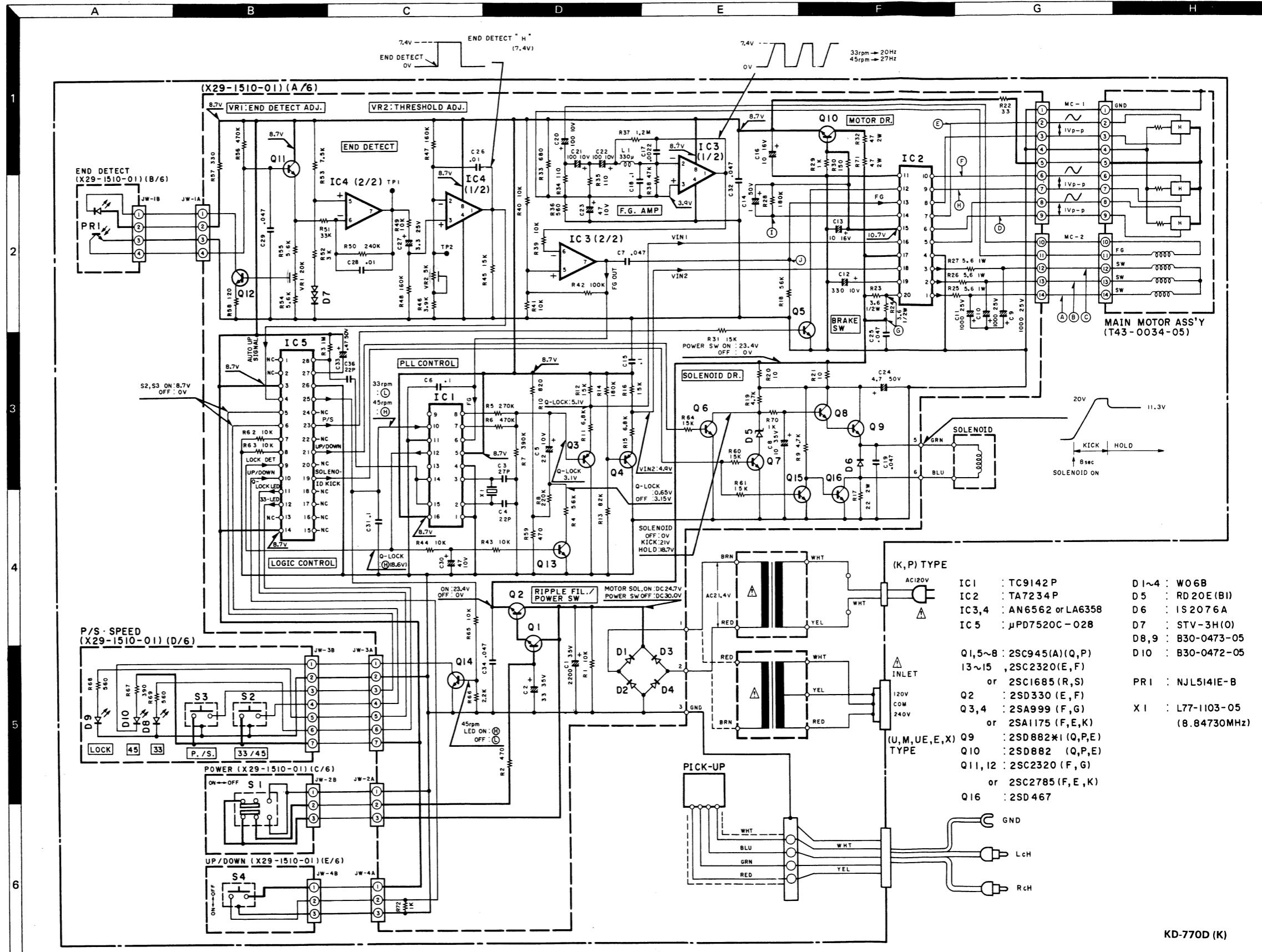
The graph shows a square wave waveform with a period of 50ms. The y-axis is labeled 'V' and ranges from 0 to 2.4. The x-axis is labeled '(mS)' and ranges from 0 to 90. The waveform alternates between 0V and 2.6V. The first cycle starts at 0V at 0ms, reaches 2.6V at 25ms, and returns to 0V at 50ms. The second cycle starts at 0V at 50ms, reaches 2.6V at 75ms, and returns to 0V at 100ms.



μPD7520C-028



AN6562



KD-770D (K)

2SA999
2SC1685
2SC2320
2SC945
2SD467

2SD88

2SD330

2SA1175
2SC2785

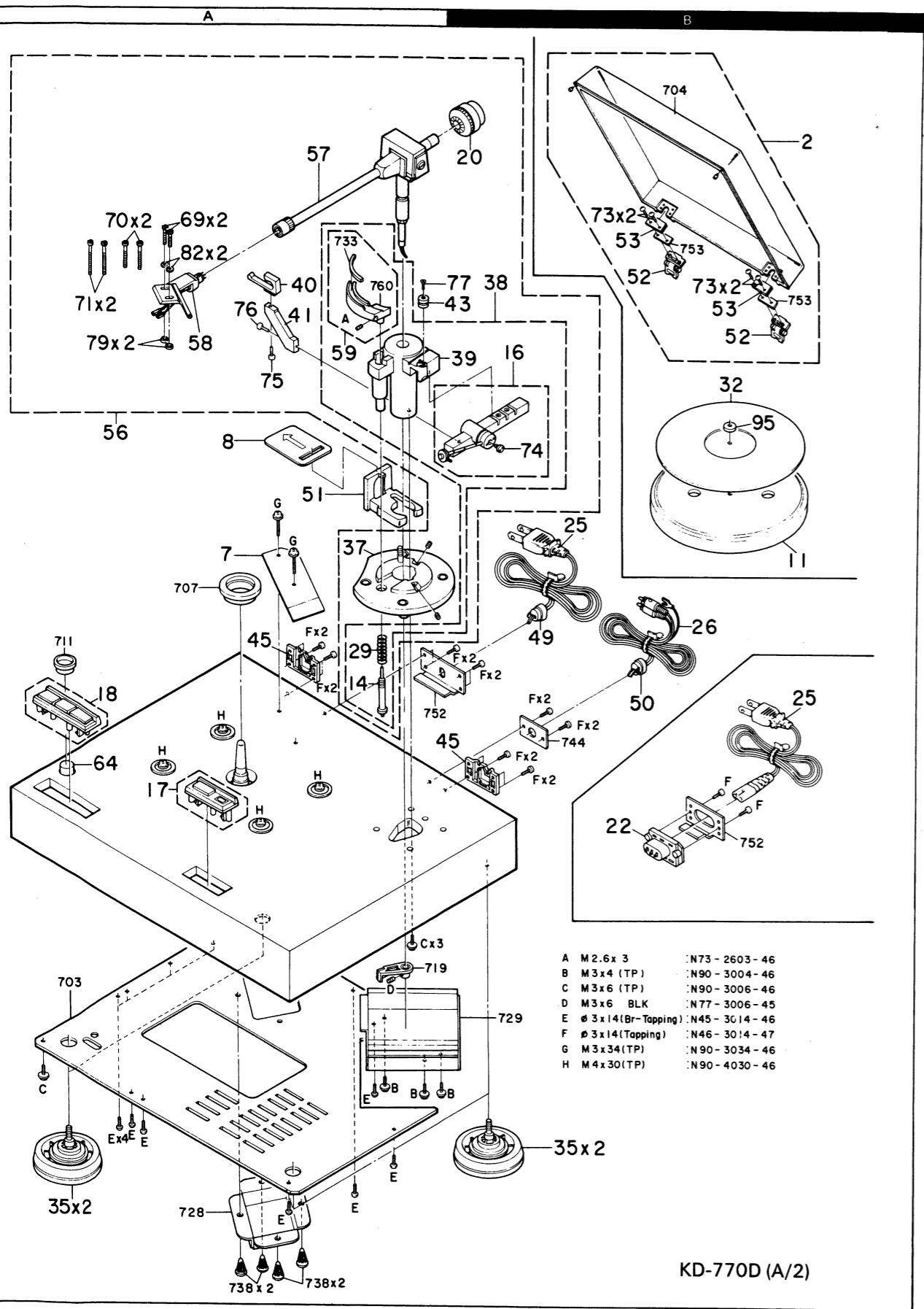
LA

TA7234P

- | | | |
|-----------|--|----------------------------------|
| AC120V | IC1 : TC9142P | D1~4 : W06B |
| | IC2 : TA7234P | D5 : RD20E(B1) |
| | IC3,4 : AN6562 or LA6358 | D6 : IS2076A |
| | IC5 : μPD7520C-028 | D7 : STV-3H(O) |
| | Q1,5~8 : 2SC945(A)(Q,P) | D8,9 : B30-0473-05 |
| LET | 13~15 : 2SC2320(E,F)
or 2SC1685(R,S) | D10 : B30-0472-05 |
| V | Q2 : 2SD330(E,F) | PR1 : NJL514IE-B |
| Y | Q3,4 : 2SA999(F,G)
or 2SA1175(F,E,K) | X1 : L77-1103-05
(8.84730MHz) |
| M,UE,E,X) | Q9 : 2SD882*1(Q,P,E) | |
| PE | Q10 : 2SD882(Q,P,E) | |
| | Q11,12 : 2SC2320(F,G)
or 2SC2785(F,E,K) | |
| | Q16 : 2SD467 | |

KD-770D

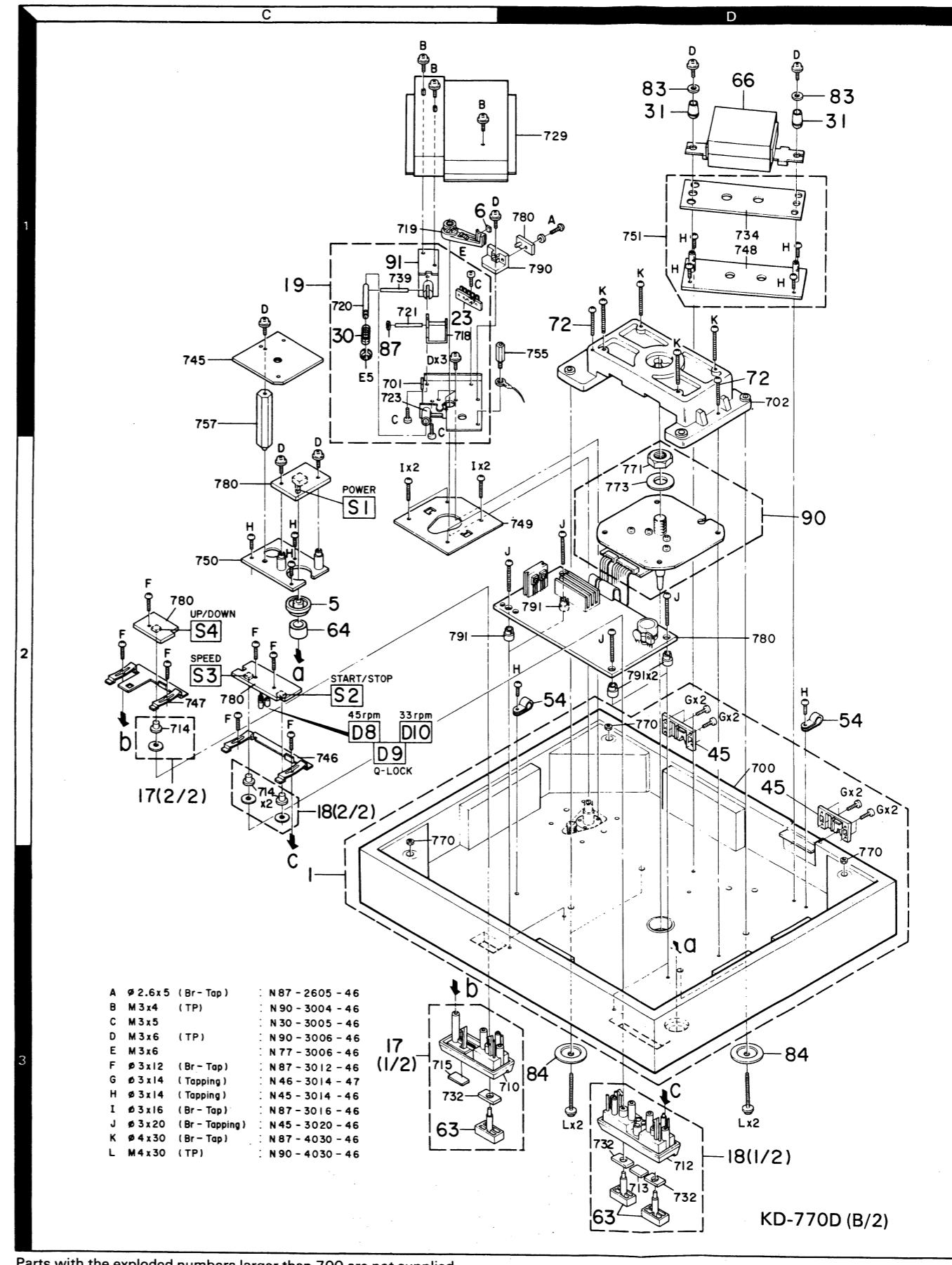
EXPLODED VIEW



KD-770D (A/2)

arts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

*** New Parts**

Parts without Parts No. are not supplied.
 Parts without Parts No. are not supplied.
 Les articles non mentionnés dans le Parts No. ne sont pas fournis.
 Les articles non mentionnés dans le Parts No. ne sont pas fournis.
 Teile ohne Parts No. werden nicht geliefert.

Ref. No.	Address	New Parts 新	Parts No.	Description	Desti- nation 仕向	Re- marks 備考
参照番号	位置		部品番号	部品名／規格		
KD-770D						
1	3C	*	A03-0267-12	TURNTABLE CABINET ASSY		
2	1B		A53-0057-02	DUST COVER ASSY		
5	2C		B07-1132-04	ESCUTCHEON (POWER SW)		
6	1C		B19-0510-14	MIRROR (SEARCH ARM)	K	
-			B46-0092-03	WARRANTY CARD	P	
-			B46-0093-03	WARRANTY CARD	UUE	
-			B46-0094-03	WARRANTY CARD		
-			B46-0095-03	WARRANTY CARD	UUE	
-			B46-0096-03	WARRANTY CARD	X	
-			B46-0098-03	WARRANTY CARD	E	
-		*	B50-5063-00	INSTRUCTION MANUAL (ENGLISH)	KUUE	
-		*	B50-5064-00	INSTRUCTION MANUAL (FRENCH)	PMX	
-		*	B50-5065-00	INSTRUCTION MANUAL (E,F,G,D,I)	E	
-		*	B50-5066-00	INSTRUCTION MANUAL (SP)	M	
-			B58-0223-04	CAUTION CARD	U	
-			B58-0269-04	CAUTION CARD	K	
-		*	B58-0289-04	CAUTION CARD	KUUEX	
-		*	B58-0289-04	CAUTION CARD	E	
-		*	B58-0290-04	CAUTION CARD	PM	
-			B58-0513-04	CAUTION CARD	UE	
-			B58-0518-04	CAUTION CARD	KUM	
-			B58-0518-04	CAUTION CARD	UEXE	
-			B58-0519-04	CAUTION CARD	P	
-			B59-0092-00	SERVICE DIRECTORY	UUE	
11	2B		D02-0039-15	TURNTABLE PLATTER		
14	2A		D21-1007-08	SHAFT ASSY		
16	1B		D39-0169-08	ANTI-SKATING DEVICE ASSY		
17	2C, 3C		D40-0294-03	OPER ASSY (UP/DOWN)		
18	2C, 3C	*	D40-0316-03	OPER ASSY (START/STOP, 33/45)		
19	1C		D40-0511-23	AUTO-UP MECHANISM ASSY		
20	1B	*	D91-0061-08	MAIN WEIGHT		
△ 22	2B		E03-0102-15	AC INLET	UMUE	
△ 22	2B		E03-0102-15	AC INLET	XE	
△ 23	1C		E22-0407-05	LUG TYPE TERMINAL STRIPS		
△ 25	2B		E30-1305-15	AC POWER CORD (INLET)	UMUE	
△ 25	2B		E30-1329-05	AC POWER CORD (INLET)	E	
△ 25	2B		E30-1342-05	AC POWER CORD (INLET)	X	
△ 25	2B		E30-1350-05	AC POWER CORD	KP	
△ 26	2B		E30-0800-05	AUDIO CORD		
29	2A		G01-1057-08	TORSION COIL SPRING (LIFTER)		
30	1C		G01-1078-04	COMPRESSION SPRING (DAMPER)		
31	1D		G13-0105-04	CUSHION (POWER TRANSFORMER)		
32	1B		G16-0355-13	TURNTABLE SHEET	PUMUE	
32	1B		G16-0355-13	TURNTABLE SHEET	XE	
32	1B		G16-0358-13	TURNTABLE SHEET	K	
-		*	H01-5010-04	ITEM CARTON CASE		
-			H10-1654-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-1655-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-1656-02	POLYSTYRENE FOAMED FIXTURE		
-			H10-1657-02	POLYSTYRENE FOAMED FIXTURE		

E: Scandinavia & Europe H: Audio Club K: USA

P: Canada

S: South Africa

T: England

U: PX(Far East, Hawaii)

UE: AAFES(Europe)

X: Australia M: Other Areas

▲ indicates safety critical components.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕向	Re- marks 備考
-			H10-1704-23 H12-0127-03 H12-0149-13 H12-0393-02 H20-0469-04	POLYSTYRENE FOAMED FIXTURE CARTON BOARD PACKING FIXTURE CARTON BOARD PROTECTION COVER		
-			H21-0221-04 H25-0029-04 H25-0078-04 H25-0159-04 H40-0005-04	PROTECTION SHEET PROTECTION BAG PROTECTION BAG PROTECTION BAG RUST PREVENTING PAPER	M M	
35 37 38 39 40	3A, 3B 2A 1B 1B 1A	*	J02-0346-13 J19-0808-08 J19-0809-08 J19-0810-08 J19-0811-08	INSULATOR ASSY TONEARM BASE ASSY LIFTER BASE ASSY LIFTER BASE (J19-0809-08ASSY) TONEARM REST		
41 43 45 49 50	1A 1B 2D 2B 2B		J19-0812-08 J19-0814-08 J21-2302-05 J41-0034-05 J42-0078-05	HOLDER WIRE GUIDE HOLDER (A03-0263-12ASSY) POWER CORD BUSHING BUSHING (AUDIO CORD)	KP	
51 52 53 54 56	2A 1B 1B 2D 1A		J42-0317-08 J50-0314-25 J50-0322-04 J61-0050-15 J91-0204-05	BUSHING (FOR TRANSPORT) HINGE (A53-0213-22ASSY) HINGE PLATE (A53-0213-22ASSY) WIRE BAND (INSIDE TT CABINET) TONEARM ASSY		
57 58 59	1A 1A 1A	*	J91-0212-08 J92-0093-08 J99-0020-08	PICKUP ARM (J19-0204-05ASSY) SHELL TONEARM LIFTER ASSY		
- -			J61-0054-05 J61-0307-05	WIRE BAND WIRE BAND	XE	
63 64	3C, 3D 2A, 2C		K29-0911-14 K29-1445-04	KNOB (IN OPER ASSY) S/S, 33/45 KNOB (POWER)		
△ 66 △ 66 △ 66 △ 66	1D 1D 1D 1D	*	L01-3222-25 L01-6511-25 L01-6514-25 L01-6514-25	POWER TRANSFORMER (H. K. ONLY) POWER TRANSFORMER POWER TRANSFORMER POWER TRANSFORMER	M KP UMUEX E	
69 70 71 72 73	1A 1A 1A 1D 1B		N09-0850-04 N09-0851-04 N09-0852-04 N09-0985-04 N09-1238-05	CARTRIDGE MOUNT SCREW(M2.6X10) CARTRIDGE MOUNT SCREW(M2.6X15) CARTRIDGE MOUNT SCREW(M2.6X20) TAPPING SCREW(MOTOR FRAME) TAPTITE SCREW(Φ3X12) DUST COVER		
74 75 76 77 79	1B 1A 1A 1B 1A		N09-1311-08 N09-1374-08 N09-1375-08 N09-1376-08 N14-0412-04	STEPPED SCREW(ANTI-SKATING) SET SCREW (Φ2X5) TONEARM REST SET SCREW (Φ2X7) REST HOLDER SET SCREW (Φ2X8) WIRE GUARD CIRCULAR NUT(M2.6) CARTRIDGE		
82 83 84 87	1A 1D 3D 1C		N19-0175-09 N19-0186-14 N19-0599-14 N29-0219-05	FLAT WASHER FLAT WASHER M TYPE WASHER RETAINING RING		
90 91	2D 1C		T43-0034-05 T94-0067-05	DIRECT DRIVE MOTOR MAGNETIC PLUNGER		
95	1B		W01-0329-04	EP ADAPTER		

E: Scandinavia & Europe H: Audio Club K: USA

P: Canada

S: South Africa

T: England U: PX(Far East, Hawaii)

UE: AAFES(Europe)

X: Australia M: Other Areas

△ indicates safety critical components.

PARTS LIST

*** New Parts**

Parts without **Parts No.** are not supplied.
 Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.
 Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格				Desti- nation 仕向	Re- marks 備考
-			W01-0302-08	HEXAGON WRENCH KEY					
CONTROL CIRCUIT (X29-1510-01)									
D8 ,9	2C		B30-0473-05	LED(PRS734S)	33,LOCK				
D10	2C		B30-0472-05	LED(BGS734S)	45				
C1			C90-1238-05	ELECTRN	2200UF	35WV			
C2			CEO4FW1V330M	ELECTRN	33UF	35WV			
C3			CC45FSL1H270J	CERAMIC	27PF	J			
C4			CC45FSL1H220J	CERAMIC	22PF	J			
C5			CEO4FW1A220M	ELECTRN	22UF	10WV			
C6			C91-0699-05	CERAMIC	0.1UF	K			
C7			CK45FF1H473Z	CERAMIC	0.047UF	Z			
C8			CEO4FW1V100M	ELECTRN	10UF	35WV			
C9 -11			C90-0855-05	ELECTRN	1000UF	25WV			
C12			CEO4FW1A331M	ELECTRN	330UF	10WV			
C13			CEO4FW1C100M	ELECTRN	10UF	16WV			
C14			C90-0719-05	ELECTRN	1UF	50WV			
C15			C91-0699-05	CERAMIC	0.1UF	K			
C16			CEO4FW1C100M	ELECTRN	10UF	16WV			
C17			C092FM1H222J	MYLAR	2200PF	J			
C18			C91-0699-05	CERAMIC	0.1UF	K			
C19			CK45FF1H473Z	CERAMIC	0.047UF	Z			
C20			CEO4FW1A101M	ELECTRN	100UF	10WV			
C21			CEO4FW1A101M	ELECTRN	100UF	10WV			
C22			CEO4FW1A101M	ELECTRN	100UF	10WV			
C23			CEO4FW1A470M	ELECTRN	4.7UF	10WV			
C24			CEO4FW1H4R7M	ELECTRN	4.7UF	50WV			
C25			CK45FF1H473Z	CERAMIC	0.047UF	Z			
C26			CK45FF1H103Z	CERAMIC	0.01UF	Z			
C27			C90-1285-05	ELECTRN	3.3UF	25WV			
C28			CK45FF1H103Z	CERAMIC	0.01UF	Z			
C29			CK45FF1H473Z	CERAMIC	0.047UF	Z			
C30			CEO4FW1A470M	ELECTRN	47UF	10WV			
C31			C91-0699-05	CERAMIC	0.1UF	K			
C32			CK45FF1H473Z	CERAMIC	0.047UF	Z			
C33			CEO4FW1HR47M	ELECTRN	0.47UF	50WV			
C34			CK45FF1H473Z	CERAMIC	0.047UF	Z			
C36			CC45SL1H220J	CERAMIC	22PF	J			
L1			L40-3311-12	SMALL FIXED INDUCTOR(330UH,K)					
X1			L77-1103-05	CRYSTAL RESONATOR					
-			N19-0099-04	FLAT WASHER					
R2			RD14GB2E471J	FL-PROOF RD	470	J	1/4W		
R17			RS14GB3D220J	FL-PROOF RS	22	J	2W		
R20 ,21			R92-0513-05	FL-PROOF RD	10	G	1/4W		
R22			RD14GB2E330J	FL-PROOF RD	33	J	1/4W		
R23 ,24			RD14GB2H3R6JMA	FL-PROOF RD	3.6	J	1/2W		
R25 -27			RS14GB3A5R6J	FL-PROOF RS	5.6	J	1W		
R32			RS14GB3D470J	FL-PROOF RS	47	J	2W		
R71			RS14GB3D470J	FL-PROOF RS	47	J	2W		
VR1			R12-3301-05	TRIMMING POT(20K)DET START					
VR2			R12-2302-05	TRIMMING POT(5K) THRESHOLD					
S1	2C		S40-2326-05	PUSH SWITCH(POWER)					
S2 -4	2C		S40-1065-05	PUSH SWITCH(UP/DOWN,S/S,33/45)					

E: Scandinavia & Europe H: Audio Club K: USA

P: Canada

S: South Africa

T: England

U: PX(Far East, Hawaii)

UE: AAFES(Europe)

X: Australia

M: Other Areas

 indicates safety critical components.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti- nation 仕向	Re- marks 備考
D1 -4			W06B	DIODE		
D5			RD20E(B1)	ZENER DIODE		
D6			1S2076A	DIODE		
D7			STV-3H(Q)	VARISTOR		
IC1			TC9142P	IC QUARTZ PLL CONTROL		
IC2			TA7234P	IC MOTOR DRIVER		
IC3 , 4			AN6562	IC OP AMP		
IC3 , 4			LA6358	IC OP AMP		
IC5			UPD7520C-028	IC MICROPROCESSOR		
PR1			NJL5141E-B	OPTO ISOLATOR		
Q1			2SC1685(R,S)	TRANSISTOR		
Q1			2SC2320(E,F)	TRANSISTOR		
Q1			2SC945(A)(Q,P)	TRANSISTOR		
Q2			2SD330(E,F)	TRANSISTOR		
Q3 , 4			2SA1175(F,E,K)	TRANSISTOR		
Q3 , 4			2SA999(F,G)	TRANSISTOR		
Q5 -8			2SC1685(R,S)	TRANSISTOR		
Q5 -8			2SC2320(E,F)	TRANSISTOR		
Q5 -8			2SC945(A)(Q,P)	TRANSISTOR		
Q9			2SD882(Q,P,E)	TRANSISTOR		
Q10		*	2SD882*1(Q,P,E)	TRANSISTOR		
Q11 , 12			2SC2320(F,G)	TRANSISTOR		
Q11 , 12			2SC2785(F,E,K)	TRANSISTOR		
Q13 -15			2SC1685(R,S)	TRANSISTOR		
Q13 -15			2SC2320(E,F)	TRANSISTOR		
Q13 -15			2SC945(A)(Q,P)	TRANSISTOR		
Q16			2SD467	TRANSISTOR		

E: Scandinavia & Europe H: Audio Club K: USA

P: Canada

S: South Africa

T: England

U: PX(Far East, Hawaii)

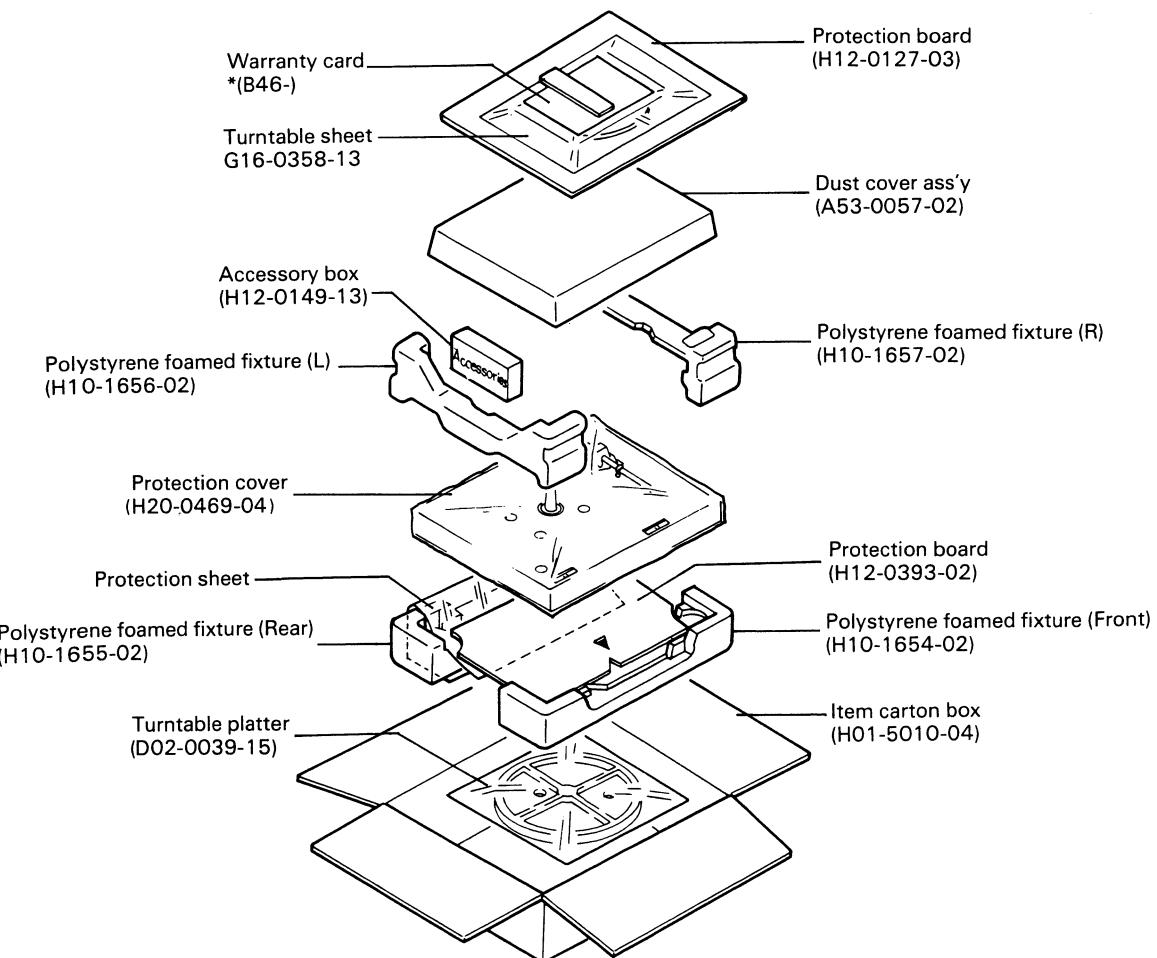
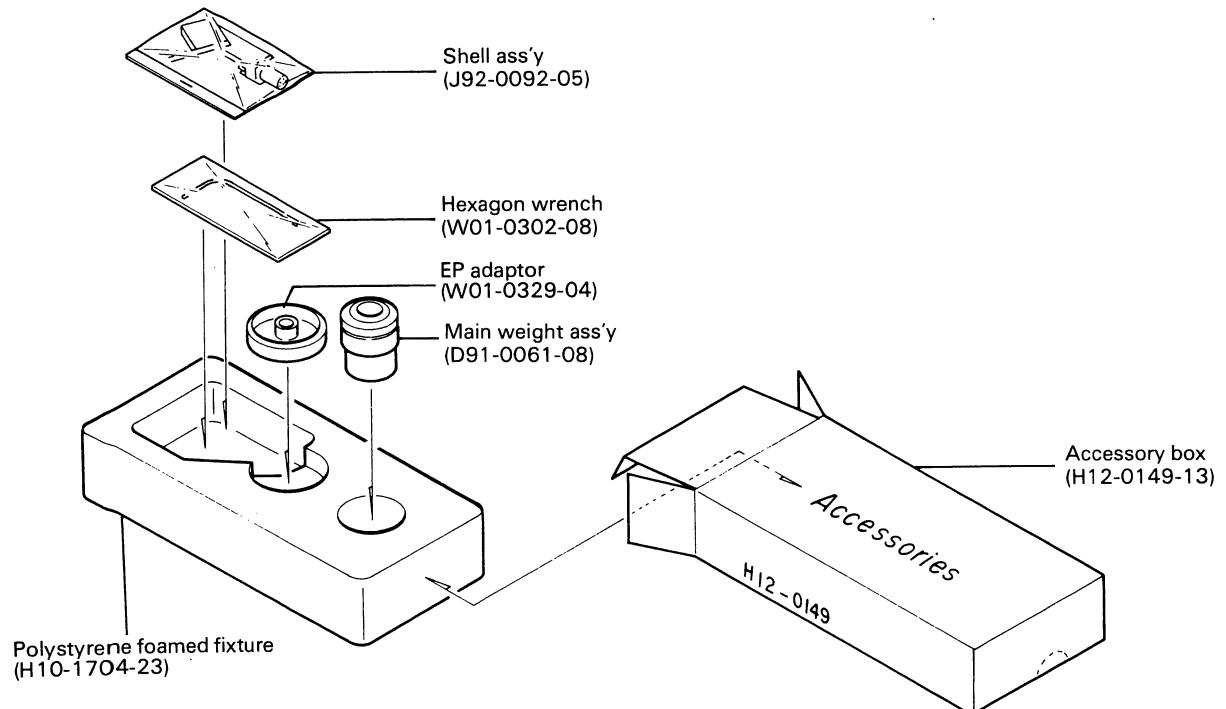
UE: AAFES(Europe)

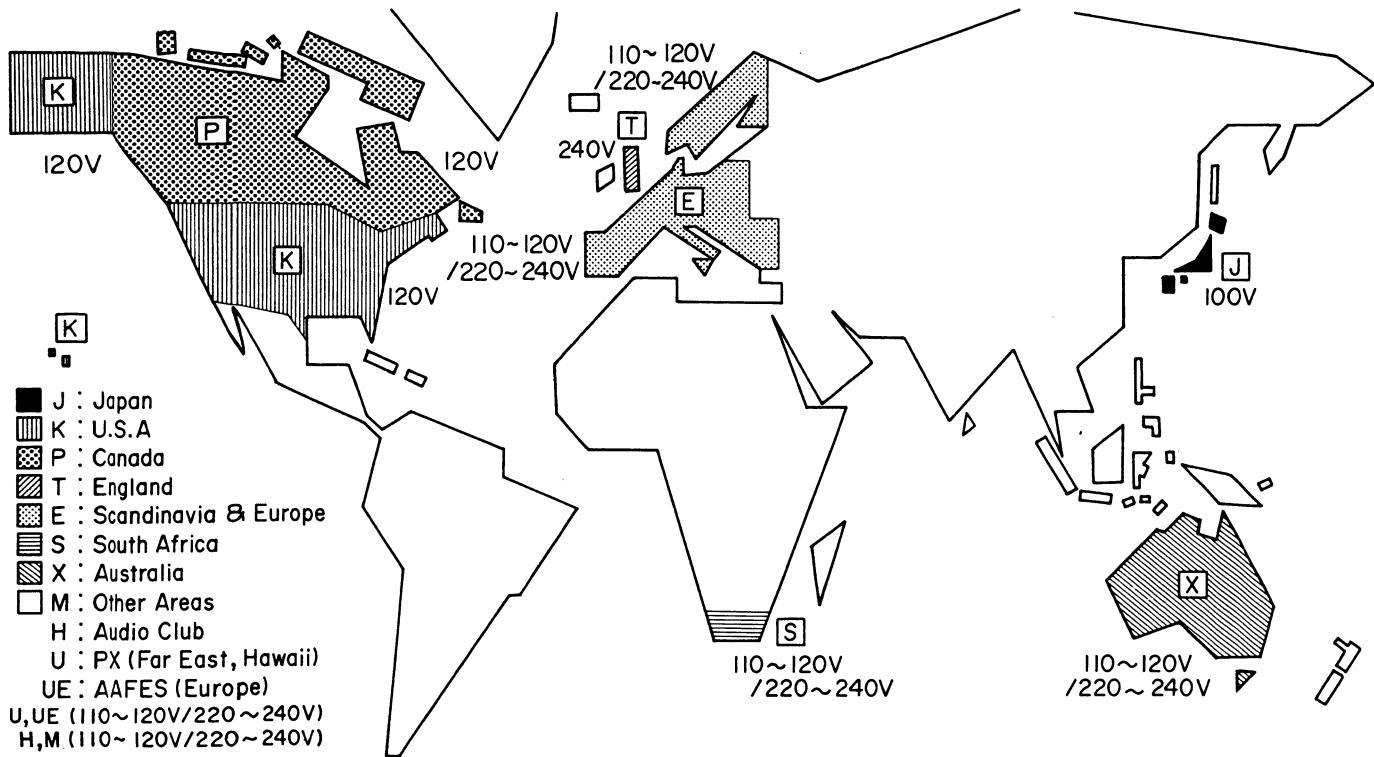
X: Australia

M: Other Areas

 indicates safety critical components.

PACKING



WORLD MAP & AREA CODE**Note:**

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

TRIO-KENWOOD CORPORATION

Shionogi Shibuya Building, 17-5, 2-chome Shibuya, Shibuya-ku, Tokyo 150, Japan

KENWOOD ELECTRONICS

1315 E. Watsoncenter Rd. Carson, California 90745; U.S.A.
75 Seaview Drive, Secaucus, New Jersey 07094, U.S.A.

TRIO-KENWOOD CANADA INC.

1070 Jayson Court, Mississauga, Ontario, Canada L4W 2V5

TRIO-KENWOOD ELECTRONICS, N.V.

Leuvensesteenweg 504 B-1930 Zaventem, Belgium

TRIO-KENWOOD ELECTRONICS GmbH

Rudolf-Brass-Str. 20, 6056 Heusenstamm, West Germany

TRIO-KENWOOD FRANCE S.A.

5, Boulevard Ney, 75018 Paris, France

TRIO-KENWOOD (AUSTRALIA) PTY. LTD. (INCORPORATED IN NSW)

4E Woodcock Place, Lane Cove, N.S.W. 2066, Australia

KENWOOD & LEE ELECTRONICS, LTD.

Wang Kee Building, 5th Floor, 34-37, Connaught Road, Central, Hong Kong